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PROVISIONAL SPECIFICATION.

An Improved Mode of Rendering Fabrics Impervious to Infection.

I HÉLÈNE RACHEL HIRSCHLER of 3 Place Victor Hugo, Paris in the Republic of France, married, do hereby declare the nature of this invention to be as follows :—

The object of this invention is to render clothes and other fabrics impervious to infection, and in such a manner that they will stand washing without detriment to the antiseptic properties with which they have been provided, and the invention consists in impregnating the fabric, whether of silk, wool, cotton, or other material, with an antiseptic substance constituting a microbicide, which is absolutely inoffensive, and without odour, and which will withstand the action of soaping, without which property the impregnated fabric would lose its antiseptic properties.

Up to this date, no one has succeeded in fixing an antiseptic substance in fabrics, especially so with respect to flannel, because it is absolutely necessary to find a substance which is rendered insoluble and becomes incorporated, so to speak, in the fibre of the fabric.

In carrying out this invention, the fabric is first impregnated with a solution of a soluble salt of bismuth, say the nitrate of bismuth, acidified with acetic acid or otherwise.

After a sufficient mordanting in this metallic solution, the fabric is well rinsed previous to being passed through a hot bath containing a solution of salicylic acid, or a soluble salicylate, or, it may be, bromic or iodo-salicilic acid, or one of their soluble salts, or benzoic or cresotinic acid, or, in a word, any other antiseptic acid or antiseptic salt capable of forming an insoluble salt of bismuth on the fibre.

Dated this 3rd day of April 1894.

NEWTON & SON,
Agents for the Applicant.

COMPLETE SPECIFICATION.

An Improved Mode of Rendering Fabrics Impervious to Infection.

I HÉLÈNE RACHEL HIRSCHLER of 3 Place Victor Hugo, Paris in the Republic of France (married), do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement :—

The object of this invention is to render garments, fabrics, or tissues, impervious to infection, and the invention consists in impregnating the garments, fabrics, or tissues, with a substance which is antiseptic, an absolutely inoffensive microbicide, and without odour, and which will allow of the garments or other fabrics being washed continuously without losing their antiseptic properties.

Up to this date, no one has succeeded in fixing an antiseptic substance in a fabric, and especially so with respect to flannel, because no one has been able to find an antiseptic which can be rendered insoluble, and becomes, so to speak, incorporated in the fibres of the fabric.

[*Price* 8*d.*]

In carrying out this invention, the fabric is first treated with a luke-warm solution of a metallic salt, which acts as a kind of mordant to prepare the fabric to take up an antiseptic in solution, and also forms a base or support to carry the antiseptic, and it further renders the antiseptic non-volatile and permanent, in the sense that it will permit of the fabric being washed without losing its properties, and, secondly, the fabric is dipped in an antiseptic solution.

The metallic salt used is one the oxide of which does not possess toxical properties, and, at the same time, is capable of forming an insoluble combination, intimately fixed in the fibre, when the fabric is submitted to immersion in a solution of an organic acid of the aromatic series constituting an antiseptic, and such metallic salt may be a soluble salt of bismuth or tin, or aluminium.

The antiseptic which is used is salicylic acid, or one of its homologues or combinations, such as bromo or iodo salicylic acid, or their soluble salts, or, it may be, benzoic or cresotinic acids, or their combinations. In a word, any other antiseptic acid or salt capable of forming, on the fibre, an insoluble salt of the metal used, may be employed. The metallic salt bath to form the mordant base or support is prepared from

125 to 150 grammes nitrate of bismuth,
or 125 grammes chloride or bichloride of tin dissolved in
200 to 250 grammes crystallisable acetic acid,—warm.

The quantities are calculated for the treatment of about 10 kilogrammes of fabric.

After the fabric has remained in the bath about half an hour, it will be found that it has absorbed all the metallic oxide contained therein.

The fabric is then removed, and after being rinsed, is passed through another bath, composed of from 60 to 100 grammes of salicylic acid or its homologues.

In case the mordanting bath is tin, a saline combination, such as salicylate of soda, will be found to answer better than salicylic acid alone.

The effect which takes place on bringing the salicylic acid into the presence of the metallic salt, is to produce an insoluble salicylate of bismuth or tin, as the case may be, with which the fabric becomes impregnated.

If the mordanting bath is composed of a salt of aluminium, the acetate is preferably employed, and the second bath will be composed of benzoic acid, or an alkaline benzoate, the substance thus produced being an insoluble benzoate of aluminium, with which the fabric is impregnated.

The second bath may be formed from bromo- or iodo-salicylic acid, or, it may be, cresotinic acid, or, as before stated, any other antiseptic acid or salt capable of forming, with the metal used for the first bath, an insoluble metallic salt on the fibre of the fabric.

Although I have mentioned garments and fabrics or tissues only, the invention is applicable to vegetable or animal fibres generally, such as used, for example, for mattresses or bedding, or stuffing for articles of furniture, or feathers used for pillows, or to down for quilts, or for any other materials or substances which are liable to become infected with microbes or germs of diseases, all of which, for the purposes of this invention, I include under the word fabrics.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is :—

1. The mode of rendering fabrics impervious to infection as herein described, and consisting in impregnating the fabric with a solution of a metallic salt, and subsequently immersing the so impregnated fabric in a solution of an organic acid of the aromatic series, as set forth.

2. In the treatment of fabrics to render them impervious to infection, the use of a metallic salt, the oxide of which, when in the presence of an organic acid of

the aromatic series, is capable of producing an insoluble salt of the metal in the fibre of the fabric, as and for the purpose set forth.

3. In the treatment of fabrics to render them impervious to infection, the use of an organic acid of the aromatic series, which, in the presence of an oxide of a metallic salt, is capable of producing an insoluble salt of the metal in the fibre of the fabric, as and for the purpose set forth.

4. In the treatment of fabrics to render them impervious to infection, the application to the fabric of an insoluble, inodorous, inoffensive, and uncoloured antiseptic compound, such as the salicylate, the cresotinate, or the bromo- or iodo-salicylate of bismuth or tin, or the benzoate of aluminium, as set forth.

5. The treatment of fabrics as herein described, and for the purposes set forth.

Dated this 4th day of January 1895.

NEWTON & SON,
Agents for the Applicant.

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